



June 7, 2002

**DESIGN MEMORANDUM No. 02-04**  
**TECHNICAL ADVISORY**

**TO:** All Design, Operations, and District Personnel, and Consultants

**FROM:** /s/ Anthony L. Uremovich  
Anthony L. Uremovich  
Acting Design Policy Engineer  
Contracts and Construction Division

**SUBJECT:** Subgrade Treatment

**EFFECTIVE:** September 17, 2002, Letting

**SUPERSEDES:** Design Memorandum 01-10 Technical Advisory

**DETERMINATION OF SUBGRADE TREATMENT LIMITS**

The practice of specifying special subgrade treatment has been further revised. The subgrade area should be computed for at-grade, cut, and cut-to-fill transitions only. The width of the treatment is between points which are 0.3 m (1 ft) outside the edges of paved shoulders or back faces of curbs. The lateral limits and type of subgrade treatment should be shown on the Typical Cross Sections in the plans.

All isolated subgrade treatment areas within the project limits, including those on S-lines, should be summed to obtain the total subgrade treatment area for the entire project. Divided highways may have parallel but separate subgrade treatment areas depending upon the width of the median.

Typically, a roadway project will contain several cut and fill areas within the project limits. Fill areas above the natural ground line should not be included in the computation.

## SUBGRADE TREATMENT METHODS

The type of subgrade treatment to be used will be specified in the Geotechnical Report as subgrade treatment type A, B, C, D, or E. If the Geotechnical Report for a given project does not specify the subgrade treatment type, the designer should send a memorandum requesting the subgrade treatment to the Materials and Tests Division's Geotechnical Section. The subgrade treatment methods are as follows:

**Type A.** This treatment consists of 400 mm (16 in.) chemical soil modification, or 300 mm (12 in.) of the subgrade excavated and replaced with coarse aggregate No. 53. Where granular soils classified in accordance with AASHTO M 145 as A-1, A-2, or A-3 exist, the subgrade may be treated by compacting 600 mm (24 in.) to density and moisture requirements.

**Type B.** This treatment consists of 200 mm (8 in.) chemical soil modification, or 150 mm (6 in.) of the subgrade excavated and replaced with coarse aggregate No. 53. Where granular soils classified in accordance with AASHTO M 145 as A-1, A-2, or A-3 exist, the subgrade may be treated by compacting 300 mm (12 in.) to density and moisture requirements.

**Type C.** This treatment consists of 600 mm (24 in.) compacted to the density and moisture requirements, or 300 mm (12 in.) of subgrade excavated and replaced with coarse aggregate No. 53, or 400 mm (16 in.) chemical soil modification.

**Type D.** This treatment consists of 300 mm (12 in.) compacted to the density and moisture requirements, or 150 mm (6 in.) of subgrade excavated and replaced with coarse aggregate No. 53, or 200 mm (8 in.) chemical soil modification.

**Type E.** This treatment consists of 150 mm (6 in.) compacted to the density and moisture requirements, or 150 mm (6 in.) of subgrade excavated and replaced with coarse aggregate No. 53.

For each of the subgrade treatment types described above, for at-grade, cut, and cut-to-fill transitions, the contractor is to choose from the applicable options for each type. The designer should not consider these options when determining subgrade treatment quantities, and should not show specific options on the plans.

The Annual Average Daily Traffic (AADT) and a specified minimum subgrade area are no longer design considerations in determining the type of subgrade treatment.

## PAY ITEMS

The specification references, code numbers, pay item names, and pay units for this work are as follows:

207-07498	Subgrade Treatment, Type A – m2 (SYS)
207-07499	Subgrade Treatment, Type B – m2 (SYS)
207-07500	Subgrade Treatment, Type C – m2 (SYS)
207-07502	Subgrade Treatment, Type D – m2 (SYS)
207-07503	Subgrade Treatment, Type E – m2 (SYS)

The following pay items have been obsoleted.

Chemical Modification, Soils – m2(SYS)

**RECURRING SPECIAL PROVISION**

Recurring Special Provision 207-R-378, Subgrade Treatment, should be called for through the February 2003 letting. Beginning with the March 2003 letting, the recurring special provision will be incorporated into revised Standard Specifications Section 207. The provision will then no longer be required to be called for in specific contracts.

alu

[F:\Des\Signed\0204-ta.doc]